

Conflict and Compromise: Changes in U.S. Strike Outcomes, 1880 to 1945

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Abstract: Before about 1900, most strikes in the United States were either won or lost by the workers who called them. Relatively few strikes ended in any sort of compromise. Sometime during the last decade of the 19th century, however, the pattern begins to change, with the fraction of strikes ending in compromise peaking at nearly half during World Wars I and II. What explains these changes in strike outcomes between the late 19th century and 1945? We explore the effects of macroeconomic conditions, industrial organization and product markets, labor organization, law and public policy, and immigration and trade on the costs and benefits of achieving strike compromises. We conclude that changes in the nature of strike outcomes represent an important and neglected aspect of broader changes in the place of organized labor in the American political economy.

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1. Compromise Strikes

Before about 1900, nearly all strikes in the U.S. were either “won” or “lost.” Very few ended in compromise.¹ This “winner-take-all” feature suggests that the strikes were “wars of attrition,” and empirical research shows that strikes over wages in the U.S. in the 1880s are consistent with that model.² At the end of the 19th century, however, the pattern began to change. The fraction of strikes that ended in compromise nearly doubled in subsequent years, and grew to 45% during World War I. After falling somewhat during the 1920s, compromise rates grew again after 1933, to nearly 1/2 in World War II. The war of attrition model, while appropriate for the 1880s, becomes less and less so thereafter. To understand this change, we construct a simple model of the compromise-fight choice, and use it to interpret the effects of macroeconomic conditions, industrial and labor organization, and immigration and trade on compromise. We find that, besides those factors, the gradual acceptance of collective labor action by employers and the government played a major role in the increase in compromises. Changes in strike outcomes reflected broader changes in the place of organized labor in the American political economy.

Figure 1 presents yearly data on the fraction of strikes ending in compromise in the U.S. between 1880 and 1945. Until 1897, compromises are scarce; the average compromise rate for the period is less than 11%. Afterward, the rate grows. From 1897 to 1915, nearly 18% of strikes end in compromise. After peaking at 45% during World War I, compromise rates fall to pre-war levels (20%) in 1922, rise to about 1/3 between 1927 and 1930, and then fall again to 20% by 1932. From 1933 to 1945, the frequency of compromise grows (except in 1935-36) to 45-50%. Overall, from 1880 to 1945 the compromise rate increases a great deal, though not smoothly.

¹ A “failed” strike is defined by the Commissioner of Labor (1888) as one in which the workers largely failed to achieve their aims. A “successful” strike is one in which the workers “gained the major part of their expressed demands.” Finally, a “compromise” outcome involves “an intermediate [outcome] in which neither side has been completely victorious.” Griffin (1939) cautions that the “limitations inherent in such a classification must be carefully borne in mind.” However, as Card and Olson (1995) argue, “government statisticians and academics at the turn of the century made extensive use of the classification[s]. These analysts evidently viewed the distinction between successful and failed [and compromised] strikes as a natural and empirically useful taxonomy.”

² Modeling late 19th century American labor disputes in this manner was suggested by Card and Olson (1995). Geraghty and Wiseman (2008) show that American wage strikes during the 1880s can be characterized as wars of attrition. The war of attrition model also fits Canadian strikes during the 1920s; see Huberman and Young (2002).

[FIGURE 1]

Measuring changes in compromise rates is more complicated than Figure 1 suggests, since data collection methods changed.³ In addition, data collectors found “compromise” hard to define precisely, and the definition used may have varied.⁴ Friedman (1988, p.4) and others classify compromised and successful strikes together, arguing that “workers in both cases gained concessions from the employer through collective action.” Not every compromise, however, was a victory for labor. For example, a strike in Cincinnati began in June 1881 when iron workers demanded a 20-percent raise. In October, they agreed to work at the old wage until June 1882, when the wage would be reduced five percent. As a result, “[t]he workers thus failed to gain a single point by the prolonged strike.” The subheadline of the *New York Times* (1881) article read, “The Cincinnati Iron Workers Agree to a Compromise.” Another problem with treating compromises as successes involves strikes that begin without any demands, as did an 1880 strike at a cotton mill in Chicopee, MA. Workers “merely complained to the overseers of the grievance [concerning deductions for damaged cloth], making no demand on the company. The strikers are orderly and without leadership or organization.”⁵ After one day, the hands returned to work, “having been promised as good pay as the employees of any cotton mill in the country receive.”⁶

Our interest, though, is not in the *terms* of the agreement that ends the strike. Rather, we argue that the *method* of reaching agreement is informative. Whether workers get a 15 percent wage increase instead of twenty is less important than whether the increase is attained through cooperative bargaining rather than an antagonistic test of endurance. We argue, too, that the substantial changes in Figure 1 cannot be the effect merely of changing definitions,⁷ and that they

³ See Peterson (1938, p.2) and Edwards (1981, pp.301-313).

⁴ See Peterson (1938, pp.167-168) and Edwards (1981, p.42).

⁵ *New York Times* 1880a.

⁶ *New York Times* 1880b.

⁷ Especially since the Bureau of Labor Statistics strove for consistency across time (Peterson, 1938 p.1).

reflect real underlying changes in labor relations. Further, we note that the fractions of successful and failed strikes do not display a pattern of change like that of compromise strikes. Table 1 offers evidence that the factors leading to compromises are different from those that lead to success.⁸ For example, from 1881 to 1894 both failure and compromise are likelier in longer strikes, and (through 1905) in strikes against wage decreases rather than for union recognition. Overall, compromises are more frequent in strikes for wage increases than in strikes against wage decreases, in strikes over multiple causes than in strikes with a single cause, in strikes authorized by a union, and in larger strikes. Strikes for union recognition are very unlikely to end in a compromise. Data from 1927 through 1936 show similar patterns.

[TABLE 1]

We present our model of the compromise-fight choice in the next section, and then use that model to predict the effects of macroeconomic conditions, industrial organization, labor organization, and public policy on compromises. Section 4 tracks those factors from 1880 to 1945, and presents an econometric evaluation of their effects. Section 5 is the conclusion.

2. A Simple Model of the Compromise vs. Continue-Strike Choice

During a strike, each side chooses between offering to compromise and continuing to fight out the strike until the end. The value of the prize in dispute is normalized to 1. If both players fight, then a war of attrition results, and both get payoffs of $-\beta$ ($\beta > 0$), reflecting the high costs of such strikes.⁹ If both players offer to compromise, then both get $\alpha \in (0, 1)$ from splitting

⁸ The data for 1881-1894 come from the Third and Tenth Annual Reports of the Commissioner of Labor (1888, 1896) as collected by Janet Currie and Joseph Ferrie. Currie and Ferrie's data set includes almost 90% of the strikes in the Reports. Bailey (1991) warns that the Reports missed some strikes, but does not find evidence of bias in inclusion.

⁹ Our model applies to other forms of strikes besides the war of attrition; what matters is that strikes destroy surplus.

the prize.¹⁰ If Player i fights while Player j offers to compromise, then Player j has greatly weakened her bargaining power, and Player i gets $1 - \varepsilon$ of the prize, leaving only ε for Player j (where $1 - \varepsilon > \alpha$ and $0 < \varepsilon < \alpha$).^{11,12}

In the symmetric Nash equilibrium, each player compromises with probability $p \equiv (\beta + \varepsilon) / (1 + \beta - \alpha)$. Note that p is increasing in α , β , and ε . Increasing the cost of a strike or the value of compromise relative to winning raises the frequency of compromise, as does decreasing the cost of a unilateral offer to compromise. Such a decrease might result if the mechanism for negotiation improves, making compromise attractive even to a party with a strong initial position.

3. Why Did Rates of Compromise Increase Over Time? Some Hypotheses

Richard Freeman (1998) has argued that changes in the strength of labor organization during the late nineteenth and early twentieth centuries resulted from changes in four factors: labor organization and strategy; macroeconomic conditions; industrial organization and product markets; and law and public policy toward organized labor. Here, we consider how those same factors may have influenced the nature of strike outcomes. As a first cut at correlating strike outcomes with macroeconomic conditions and union growth spurts, consider Table 2. Table 2 indicates that periods of union growth identified by Freeman coincide with increases in compromise rates, economic booms, and increases in strike activity.¹³ Figure 2 shows that there is also a close positive correlation (with a correlation coefficient of 0.46) between the compromise outcomes and the inflation rate. Higher profits and wages in boom times may have encouraged both sides to limit losses from extending strikes. (In the model of Section 2, that

¹⁰ The value of α may differ from $\frac{1}{2}$ if players are risk averse, or if α also captures continuation effects from compromising. Those effects may be positive if compromising can discourage future strikes, for example.

¹¹ Hiller (1928, p.197) argues that “[a]n offer by one party to settle or to make concessions is interpreted by the other as a sign of weakness.” Similarly, Edwards (1981, p.238) argues that “[o]nce it becomes accepted that rapid concessions will be taken as a sign of weakness, both sides must take up apparently intransigent positions and prepare for a long fight.” See Geraghty and Wiseman (2008) for historical examples.

¹² The assumption of symmetry in the payoffs is made for simplicity only. There would be no qualitative difference if, for example, workers value compromise more highly than firms, so that α is higher for workers than for the firm.

¹³ Shorter and Tilly (1974, p.87), who consider French strikes from 1890-1913 and 1920-35, find a positive correlation between the probability of compromise and wholesale prices, industrial production, and unionization.

change corresponds to an increase in β .) Possibly workers' aversion to wage cuts played a role too, with rising prices putting less pressure on firms to reduce costs through nominal wage cuts.¹⁴ Table 1 indicates that strikes against wage cuts were 31% less likely to end in compromise than strikes for wage increases between 1881 and 1905, and 28% less likely between 1927 and 1936.

[TABLE 2]

[FIGURE 2]

Figure 3 plots union density (the fraction of the labor force represented by a union) against the compromise rate. Strong unions may have encouraged firms to compromise rather than face a lower probability of winning a strike (a higher β for firms). Freeman (1998) suggests that higher union density reduced firm resistance to union organizing, as the greater likelihood that competitors were also organized put unionized firms at less of a competitive disadvantage (a higher α for firms).¹⁵ Improved labor organization could also reduce negotiating costs.

[FIGURE 3]

If changes in product markets lead to increased profits for firms, then the model of Section 2 implies that compromises will increase. On the other hand, if decreased competition results in collusion by employers, then firms' costs of enduring a strike fall (a decrease in β), and compromise is less likely. We explore those effects in detail in the next section.

¹⁴ Hanes (1993) shows that a large, permanent decrease in nominal wage flexibility in American manufacturing occurred in the late 19th century, driven by the propensity of workers in large-scale manufacturing enterprises to strike against nominal wage cuts in downturns. Firms, he argues, learned to avoid nominal wage cuts to minimize strike costs.

¹⁵ Card and Olson (1995) argue that the indivisibility of the union recognition issue made 1880s strikes winner-take-all.

Changes in the government's attitude toward labor also affected the compromise rate. As discussed above, if the two parties in a strike expect a war of attrition, then it is very costly for either to propose a compromise: "that party thereby would run the risk of appearing very anxious to reach agreement, and even willing to make large concessions to do so. The likely result would be a hardening of the other party's position rather than an early settlement."¹⁶ Thus, establishing arbitration as an accepted option increases the probability of compromise even in strikes that are not arbitrated (through an increase in ϵ). Comparisons across countries suggest that the government's willingness to arbitrate neutrally encourages compromise.¹⁷ In the U.S., there was "no lasting governmental intervention in the conduct of labor relations in the great majority of industries" before World War I,¹⁸ when "unprecedented government intervention" aimed at "encouraging collective bargaining."¹⁹ The large positive effect on compromise rates is apparent from Figure 1 – compromise was more likely even after the war, when the government scaled back its direct role. In Great Britain, on the other hand, involvement in labor disputes was established as early as 1893,²⁰ and after 1896 it was formally government's "duty" to "foster conciliation processes in industry."²¹ Compromise was thus common earlier than in the U.S.; in 1889-90, 36% of striking workers in Britain reached a compromise.²² In France as well, the government began to intervene early: state officials were involved in 21% of labor disputes from 1895-99 and 1910-1914.²³ Figure 4 shows that the trends of compromise rates in France and the U.S. were very similar. One important difference, though, is that in France compromise rates are no higher after World War I than just before: compromise was already an accepted option.

¹⁶ Cross (1969, p.93). Chicago Mayor William Thompson, perhaps recognizing this difficulty, ended a 1915 street car strike by "lock[ing] the opposing factions in his chamber and [telling] them they'd stay there until the strike was settled" (*New York Times* 1915).

¹⁷ Neutrality is crucial. Friedman (1988, 1998) contrasts France and the U.S.'s intervention on different sides.

¹⁸ Edwards (1989, p.254).

¹⁹ Edwards (1989, p.255).

²⁰ Macdonald (1976, p.49), Fraser (1999, p.97), and Howell (2005, p.46).

²¹ Macdonald (1976, p.49).

²² Cronin (1989, p.95).

²³ Friedman (1988, p.7). Local officials intervened in around 45% of disputes between 1893 and 1914, and the national government in roughly 5% (Shorter and Tilly, 1974 pp.40-41 and Tilly, 1989 p.11).

[FIGURE 4]

Finally, in addition to Freeman's four factors, changes in the global economy – foreign trade and immigration – had important effects on the rate of compromise. Tariff rates and export demand influence macroeconomic variables, and so affect compromises. Changes in immigration may further influence compromise through changes in the composition of the labor force.

4. The Five Factors in U.S. Labor History, 1880 to 1945

In this section, we examine in more detail changes in the five areas identified in the previous section as important determinants of compromise rates (labor organization, macroeconomy, global economy, industrial market structure, and public policy). We also test the predictions of the model in Section 2 using time-series data covering 1880-1945.

[TABLE 3]

Table 3 provides the results of an AR(1) regression of the percentage of compromise strikes in a given year on a number of explanatory variables.²⁴ The inflation rate measures broad macroeconomic conditions. The degree of labor militancy, organizing effort, and bargaining strength is measured by two variables: union density and the percentage of the labor force who participated in a strike (lagged one period). Three variables – the net immigration rate, the average tariff rate, and the volume of real (gross) exports – represent global labor and product markets and related policies. To capture the hypothesized effect of the establishment of arbitration as an accepted option, we include a dummy variable indicating whether or not a given observation occurred after 1914. Finally, a time trend is included.

²⁴ Strike outcome data come from Griffin (1939) for 1880 to 1937, and issues of the BLS Monthly Labor Review for 1938 to 1945. The union density series is from Freeman (1998), as are the data strike participation. Inflation data come from Gordon (2006). Immigration, tariff rates, and real exports are from Historical Statistics of the United States.

This model accounts for a large percentage of the variation in compromise rates. The proportion of compromise strikes is positively and significantly (at the 1% level) correlated with union density, the inflation rate, and real exports. These results are consistent with our model, as noted above. The compromise rate is negatively and significantly correlated with the net immigration rate (at the 10% level) and lagged strike activity (5%). The immigration result is also consistent with our model. Higher immigration levels make more strikebreakers available to firms, increasing their ability to hold out and win strikes. The finding that a higher proportion of workers striking last year is correlated with fewer compromises this year is somewhat surprising. Perhaps a high level of strike activity reflects a less cooperative labor-employer relationship.

To show the impact of the beginning of federal arbitration, we first estimate the model using data from 1880 to 1914, and then use the estimated coefficients to predict compromise rates for 1915 to 1945. These results are displayed in Figure 5. The model accurately predicts *changes* in the rate of compromise over time, but it underestimates the *level*. Specifically, in the pooled regression the coefficient on the postwar dummy is positive and significant at the 1% level – all else equal, a strike is 7% more likely to end in compromise after 1914 than before.

[FIGURE 5]

To further investigate the effects of the five factors on strike outcomes, we decompose changes in compromise rates into their causes based on our regression. The contribution of each variable to the proportion of compromise strikes in a given year is the regression coefficient multiplied by the level of the variable. The results are presented graphically in Figures 6 and 7, and numerically in Table 4. We look at each of five sub-periods from 1880 to 1945 in turn.²⁵

²⁵ The periods in this decomposition were chosen to, as far as possible, compare troughs in the compromise rate to peaks. The endpoints thus define periods of generally rising or falling rates of compromise. This periodization differs slightly from that proposed in the narrative, but the difference does not materially affect the analysis.

[FIGURE 6]

[FIGURE 7]

[TABLE 4]

a. The War of Attrition Period, 1880 to 1896

In this period, strikes rarely ended in compromise, for a number of reasons. Labor unions were weak; employers fiercely resisted collective bargaining. High unemployment and falling prices meant that profits were low, and that there were few rents for employers to share with workers. The compromise rate does increase by some 11 percentage points between 1881 and 1901. Our decomposition indicates that changes in immigration and exports were the drivers.

Labor Organization. In the 1880s, union densities were extremely low by modern standards, reaching only two to three percent of the nonagricultural labor force. Strike activity was also much lower than in later periods (except for the 1920s). Low union densities increased resistance to labor organizing, since, as Freeman (1998) argues, no firm wanted to be put at a competitive disadvantage. Many strikes (an average of 18 percent each year, three times the average of the subsequent period, and higher than any other period in the sample) fought proposed wage cuts, an issue that workers were particularly unwilling to compromise on.

Union membership did grow, in fits and starts, over the period, temporarily during the rise of the Knights of Labor from 1883 to 1886, and more permanently from just before 1900. Between 1880 and 1900 union membership increased from 2 percent of the workforce to 8 percent. Although modest by future standards, this growth accounted for fully 36 percent of the 11 percentage-point increase in compromises during the period, according to our decomposition.

Macroeconomic Conditions. This period saw high unemployment (especially after 1893) and deflation. Half of real wage growth during this period was due to falling consumer prices rather than nominal wage gains. These factors depressed incentives to compromise.

Immigration and Foreign Trade. Reduced immigration and increased export demand helped raise the compromise rate. Immigration, though falling, was rapid relative to later years, as Figure 8 depicts. There were “virtually no legal restrictions” on entry to the U.S.²⁶ High immigration discouraged compromise by providing potential strikebreakers. Our decomposition shows that declines in immigration in this period explain nearly a third of the increase in compromises. Real exports also grew substantially between 1880 and 1896 (Figure 9), as booming foreign demand helped to ease deflationary pressures by the end of the period. This increase in exports accounts for a quarter of the increase in compromises. Tariffs were high throughout the period.²⁷

[FIGURE 8]

[FIGURE 9]

Firm Behavior, Product Markets, and Industrial Organization. The nature of product distribution during the 1880s and 1890s drove employers to take a hard line against collective bargaining. Where industry structure was fragmented, expanding markets for manufactured goods led to wholesaler control. Wholesalers used their market power to “play off competing manufacturers against each other, producing a cutthroat competition, low prices, low profits, and consequently a steady and insistent pressure upon wages.”²⁸ Manufacturers had every incentive to resist paying

²⁶ Cohn (2001).

²⁷ The McKinley Tariff Act of 1890 raised the already-high duties imposed after the Civil War; 1894’s Wilson-Gorman Tariff Act moderated them slightly (Tussaud, 1924 pp.251, 317-318, 448).

²⁸ Commons (1918, p. 359).

higher wages or improving working conditions. In other industries, manufacturers organized into trusts. There was little competition for labor among firms in a trust, helping them hold out against strikes. An example is the iron and steel industry, dominated by the U.S. Steel Corporation.²⁹ In our model, both low levels of industrial concentration and very high levels (trusts) lead to low compromise rates. Figure 10, which combines 1881-1894 data on compromises with data on industrial concentration, demonstrates that inverted-U-shaped relationship: industries with the lowest and lowest 4-firm concentration ratios had lower than average rates of compromise.

[FIGURE 10]

Employer resistance to union organizing took a variety of forms. Yellow-dog or “iron-clad” contracts (in which workers promised not to join a union), blacklists, lockouts, collusion, strikebreakers, and military intervention were all part of the anti-union arsenal.³⁰ In 1882, iron and steel manufacturers combined to stop a strike by the Amalgamated Association of Iron and Steel Workers. In 1883, a strike of telegraphers failed; union leaders were blacklisted. In 1884, when workers struck to protest a wage cut, the Columbia and Hocking Coal companies cut wages even further and forced returning workers to sign “iron-clad” agreements. Strikebreakers helped defeat an 1884 strike by cotton spinners in Fall River, MA, and fifty union leaders were blacklisted. Two famous strikes (the Homestead strike of 1892, pitting Carnegie Steel against the Amalgamated Association, and the Pullman strike of 1894) failed when the employers were aided by state militias and, in the latter case, federal troops.³¹

Law and Public Policy. As Friedman (1988, pp. 14-15) emphasizes, the attitude of the state toward labor in this period was overwhelmingly pro-business:

²⁹ Commons (1918, p. 360).

³⁰ Rees (1989, pp. 11-12); Perlman (1922, p. 94).

³¹ Perlman (1922, pp. 83-85, 97-100, 133-139); Commons (1918, pp. 495-497, 502-503).

Repression . . . was the method chosen by most American government officials to deal with large strikes. . . . [B]oth the guard and the regular army were increasingly active in later labor disputes, intervening over 500 times between 1877 and 1903[A]fter the early 1880s employers could turn to other government bodies, notably the judiciary, for support against labor militancy. . . . Few judges attempted to outlaw strikes, but many used injunctions to restrict strikers' actions severely. . . . strike injunctions grew in number, in the words of Felix Frankfurter and Nathan Greene, "like a rolling snowball" until they were "at the disposal of the employer almost upon request.

Several states in this period did pass pro-labor laws that legalized unions, outlawed the blacklist, or established maximum working hours.³² (Table 5 provides a list.) However, Currie and Ferrie (2000) show that these laws had little effect on strike outcomes; Hattam (1993) argues that the legislation was ineffective because the judiciary remained hostile to labor.

[TABLE 5]

Even when settlements were reached, labor contracts in most states were considered "court-unenforceable gentlemen's agreements" until 1947's Taft-Hartley Act.³³ As a result, even successful strikes did not always result in lasting gains for workers. For example, in 1885 the Knights of Labor won a strike against Jay Gould's Wabash Railroad, which reversed a wage cut and recognized the Knights. Gould sabotaged the agreement, however, by firing union officials. In 1886, the railworkers struck again, this time unsuccessfully.³⁴ This anti-labor stance made it very difficult for the government to act as an arbitrator or otherwise encourage compromises.

³² Currie and Ferrie (2000).

³³ Gould (1993, p. 31).

³⁴ Perlman (1922, pp. 94-96).

b. "Partial Recognition," 1897 to 1915

Union density increased to twelve percent in 1904. A much higher proportion of strikes ended in compromise than over the previous sixteen years, but there was very little further increase during the period - only around two percentage points. The gains in union density and exports were offset by high immigration and a sharp decrease in the tariff at the end of the period.

Labor Organization. Union membership grew rapidly between 1897 and 1904 and stabilized thereafter. Strike activity increased substantially as well, with the number of strikes per year tripling, and the number of strikers per year doubling, relative to the period 1880 to 1896. New strategies produced a more homogeneous labor movement, with fewer free-rider problems, more stability of membership, increased strike success, and more benefits for union members:

American unionists responded to failures by organizing small craft unions ... , opting to organize some workers rather than all. ... By involving smaller groups in fewer but better planned and funded actions and consciously avoiding state intervention, American unions conducted much more successful strikes after 1886 than previously. . . . by 1900 virtually all national unions had large strike funds.³⁵

From 1895 to 1899, workers won 60% of strikes, compared to an average of 40% for 1880-1945. The increases in the frequency and success rate of strikes made employers willing to bargain. "As a result of the increase in strikes," argues Barnett (1912, p. 426), "a widespread movement for the peaceful settlement of the conditions of employment was inaugurated . . . employers' associations formed originally for other purposes began to negotiate with the unions." Firms and unions in several industries made collective bargaining agreements, or "trade agreements." Table 6 lists notable trade agreements,³⁶ some of which established mechanisms for arbitrating disputes.³⁷

³⁵ Friedman (1988, pp. 16-17).

³⁶ These agreements covered issues such as wages, job protection, and collective bargaining preservation.

³⁷ Perlman (1922, pp. 191-192)

[TABLE 6]

Overall, union density increased from 8 percent in 1901 to 10 percent in 1914. According to our regression, this rise in union power, all else equal, increased the rate of compromise strikes by about two percentage points, accounting for nearly all of the actual increase.

Macroeconomic Conditions. The economic environment was much more favorable for compromise during this period. Prices rose, reducing pressure for firms to demand wage concessions. Unemployment was low in most years. The growth rate of real GDP between 1897 and 1904 exceeded five percent per year, a 60% increase over the average for 1880-1896. The next decade, from 1905 to 1915, saw slower growth, but avoided the deflation of 1880-1896.

In addition, memories of the depression years of 1893 to 1898 may have played a role in changing public perceptions of trade unions, as Taft (1964, p. 162) suggests:

Prolonged unemployment, with its accompanying destitution and suffering, tarnished the reputation of business, and the public regarded, at least for a time, the workers' quest for greater security and higher pay as justifiable. Exposures of corporate derelictions made the demands of labor for some countervailing power appear reasonable.

Immigration and Foreign Trade. There was no substantial change in immigration law during the period.³⁸ Tariffs also were mostly stable (and high) until the end of the period – the Tariff Act of 1897 increased protection somewhat, but the Act of 1913 reduced protection to the lowest level since the Civil War.³⁹ Real exports grew steadily. According to our decomposition, the positive

³⁸ Cohn (2001).

³⁹ Tussaud (1924, pp. 358, 448).

effect of export growth on the compromise rate (two percentage points) was more than offset by the negative impact of high immigration and lower tariffs (three percentage points combined).

Firm Behavior, Product Markets, and Industrial Organization. By the late 1890s, firms were “reach[ing] out directly to the ultimate consumer, or, else, by means of control over patents and trademarks,” had limited the power of wholesalers.⁴⁰ With middlemen cut out, profit margins increased, relieving the pressure on wages, and making employers more willing to compromise.

Law and Public Policy. Another manifestation of the “widespread movement for peaceful settlement” was the creation of new dispute resolution mechanisms, both formal and ad-hoc. For example, as the *New York Times* (1897) reported on the 1897 coal miners’ strike:

The greatest interest is now manifested in the scheme to arbitrate the strike question. Labor commissioners and official arbitrators of the several states affected are now mobilizing . . . Invitations have been sent to the coal operators of the Pittsburgh district to meet the arbitrators informally and talk over the matter of settling the strike. . . . If the operators can be brought into line on the conference idea, there will be no obstacles interposed by the miners.

By 1905, 25 states and the federal government had passed legislation authorizing mediation in industrial relations.⁴¹ These programs, however, were often more notional than real. An investigation in 1900 found that the laws “in many instances have never been enforced to any extent whatever.”⁴² Overall, Friedman (1988, p.14) reports that “[a]rbitration was carried out in only 8 states with a significant amount of state intervention in only 2 Only 1.61 percent of strikes and lockouts were settled through mediation in 1901-1905.” Despite their apparent

⁴⁰ Commons et al. (1926, pp. 480-482)

⁴¹ Friedman (1988, p.14).

⁴² Illinois State Board of Arbitration (1900), quoted in Friedman (1998, p.114).

ineffectiveness, though, the very existence of these programs suggests a change in government attitudes. Similarly, passage of the Erdman Act of 1898, outlawing yellow-dog contracts and the blacklist in railroads, provides further evidence of an easing of official attitudes toward labor.⁴³

c. World War I and its Aftermath: 1916 to 1921

During the war nearly 40 percent of strikes ended in compromise, twice the rate of 1897–1915 and nearly four times that of 1880-1896. The period saw favorable macroeconomic conditions and the first substantial pro-labor government policies in U.S. history. After the war, deflation, falling exports, and the reversal of wartime labor policies reduced compromise rates.

Labor Organization. Labor unrest reached new highs. Wartime production demands and low immigration meant that “labor was suddenly in a position of power.”⁴⁴ Many more workers were joining unions: density nearly doubled from 1916 to 1920, to 17 percent. Organized labor made headway in mass production industries, like automobiles and electrical machinery. Thus, “labor militance [was] percolat[ing] down to the mass of unskilled and semiskilled workers.”⁴⁵ The number of strikes per year increased by 25 percent, and the number of workers involved tripled compared to 1897-1915. The influx of new workers into northern industrial plants, along with tight labor markets, reduced shop floor discipline, worker effort, and labor productivity. Turnover and absenteeism among workers skyrocketed.⁴⁶ These effects made labor relations adversarial and tended to counteract the positive effects of the increase in union density on compromise rates.

Macroeconomic Conditions. The unemployment rate averaged just 3.5% between 1916 and 1920. The economic boom generated a great deal of inflation, which averaged 15 percent per year and

⁴³ Taft (1964, pp. 162-164)

⁴⁴ Brecher (1997, p.117).

⁴⁵ Jacoby (1985, p. 137); see also Perlman (1922, pp. 235-6).

⁴⁶ Jacoby (1985, pp. 133-137).

eased pressure to cut nominal wages. Our decomposition suggests that rising inflation explains a third of the increase in the compromise strike rate between 1914 and 1918. After the war came a short but deep depression with falling prices and high unemployment during 1921-22. The compromise rate dropped from 31% in 1920 to 19% in 1922, and our time-series decomposition indicates that the deflation of 1921-1922 was the single most important factor behind this decline.

Immigration and Foreign Trade. In 1916 immigration dropped almost to zero, because of World War I. Our decomposition indicates that this decline explains 12 percent of the increase in compromise strikes from 1914 to 1918. The literacy test (passed in 1917) and the Quota Act of 1921 represented a “fundamental change in U.S. immigration policy,” and “virtually banned immigration from ... Asia.”⁴⁷ Nevertheless, immigration rates rebounded somewhat after the end of the war. The Emergency Tariff Act of 1921 raised duties sharply in response to the depression mentioned above.⁴⁸ Our decomposition, though, shows that neither change had much effect on compromise rates after 1918. From 1914 to 1916 real exports more than doubled, generating over 18 percent of the increase in compromises. After the war, when the export boom collapsed, the fall in exports explains over a fifth of the decline in compromises from 1918 to 1922.

Firm Behavior, Product Markets, and Industrial Organization. Cooperation between unions and management characterized wartime labor markets, but it vanished in the early 1920s; both sides wanted to be repaid for sacrifices made during the war.⁴⁹ Employers believed that labor unions had become too strong, and they did their utmost to reverse this trend. Many employers supported the “American Plan,” which promoted the open shop. Others went even further, advocating steps to prevent workers from joining unions and refusing to deal with unionized firms.⁵⁰

⁴⁷ Cohn (2001).

⁴⁸ Kaplan (2008), Smiley (2008).

⁴⁹ Brecher (1997, p.118).

⁵⁰ Jacoby (1985, pp. 167-169).

Law and Public Policy. As Jacoby (1985, p. 140) describes, the war years were remarkable for the extent to which government intervened in labor markets on behalf of workers. Once the U.S. entered the war, in April 1917, new bodies were set up to regulate labor markets in crucial industries. Beginning in July 1917, all War Department construction work was paid based on union wage scales, and a dispute resolution mechanism was established. In August, a board was created to regulate wages and working conditions and resolve disputes in the shipbuilding industry. Other such boards were established for shipping and for dockworkers.⁵¹ The government nationalized the railroads in December 1917, granting full recognition to shop unions, mandating improved working conditions and outlawing the blacklist. In coal mining, an October 1917 deal among unions, management, and the government resulted in wage increases.⁵²

The government also set up agencies to regulate regional and national labor markets, primarily to prevent strikes and lockouts. In December 1917, a War Labor Policies Board was created to address dispute resolution, training, workplace safety, and worker living conditions. The War Labor Board mediated labor disputes in important industries. The board required firms to recognize workers' right to organize, abolish the blacklist and pay a "living wage." The eight-hour day was established nationally.⁵³ For the first time, the U.S. government intervened systematically in labor markets in a way that encouraged collective bargaining.

After the war, these institutions were dismantled. Employers were free to embark on their postwar anti-union campaign. Those government bodies that survived often favored employers. Such was the case in a strike of New York longshoremen, who were dissatisfied with wages set by the National Adjustment Commission, and one in the coal industry in 1919, where wage regulation failed to enforce the "living wage." Likewise, the Railroad labor board ordered several

⁵¹ Taft (1964, pp. 309-313).

⁵² Taft (1964, pp. 314-315)

⁵³ Perlman (1922, pp. 235-236); Taft (1964, pp. 316-319); Jacoby (1985, pp. 140-143)

cuts in wages in the early 1920s, leading to a wildcat strike.⁵⁴ A number of judicial decisions also went against labor. The Supreme Court in 1921 issued rulings that stripped labor of Clayton Antitrust Act protections, upheld the rights of courts to limit the activities of organized workers, and forbade states from prohibiting anti-labor injunctions. Minimum wage and maximum hours laws were declared unconstitutional in 1923. Thus, the institutional framework that promoted labor-management cooperation and compromise had been virtually eliminated by 1923.⁵⁵

Changes in public policy appear to have been quite important both in shaping the rise of compromise during the war years, and in facilitating the later move away from compromise. This finding is consistent with our decomposition results. Fully 40 percent of the change in the compromise rate is explained by factors such as changes in public policy that we do not directly measure in our data set. Recall also that our time-series analysis shows a permanent increase of seven percentage points in the compromise rate after 1914 and the beginning of federal intervention.

d. The Return to Normalcy? 1922 to 1933

Economic stability from 1923 to 1929 was followed by depression and deflation. From a low of 19% in 1922, the percentage of compromise strikes climbed during the years of prosperity to 33% in 1927-28, before collapsing to a 21% in the depths of the Great Depression in 1932.

Labor Organization. Union activity sharply declined throughout the 1920s. From nearly 17 percent in 1920-21, union density fell under 11 percent by 1933. Strike activity fell even more: from 1927 to 1930 the numbers of strikes and striking workers were the lowest since the 1880s. In coal mining, unions accepted wage cuts imposed by employers suffering from post-war over-expansion, deflation, and competition from non-union mines. Between 1927 and 1933, the power

⁵⁴ Taft (1964, pp. 344-346; pp. 349-355; pp. 372-382).

⁵⁵ Keller (1990, pp. 145-146).

of the United Mine Workers (the largest U.S. union from 1900 to 1927) was virtually eliminated. By 1933, only 15 percent of American coal was mined by UMW-organized firms, compared to 85 to 90 percent between 1900 and 1927. Efforts to organize the automobile industry in 1926 and southern textile mills in 1929-30 failed.⁵⁶ Our regression estimates that the decline in union density accounts for about 14 percent of the fall in the compromise rate between 1922 and 1928.

Macroeconomic Conditions. While the economy as a whole was expanding, manufacturing labor markets were shrinking. From 1923 to 1927, industrial unemployment rates were higher than in any other non-depression period since 1900. According to Jacoby (1985), labor-saving technological change and stagnation in textiles, steel, and railroads were the main culprits. Prices were stable. Our decomposition shows that improved macroeconomic conditions – the reversal of the severe deflation of the early 20s – explains a quarter of the 13 percentage point increase in the fraction of compromise strikes between 1922 and 1928. The period from 1930 to 1933, on the other hand, witnessed another rapid deflation as prices fell by 25 percent. That deflation accounts for nearly half of the 12 percentage-point decline in the compromise rate from 1928 to 1932.

Immigration and Foreign Trade. The National Origins Act tightened immigration restrictions in 1924.⁵⁷ The 1922 Fordney-McCumber Tariff and 1930's Smoot-Hawley Tariff increased protection.⁵⁸ With the restrictive laws passed from 1917 to 1924, immigration rates cease to be an important determinant of changes in the rate of compromise strikes. Shifts in export demand, however, continue to matter. The U.S. enjoyed a powerful economic position in the mid-1920s, as Europe suffered from the aftermath of the war and overvalued exchange rates. Strong export demand and accounts for over 20 percent of the increase in compromises. The subsequent collapse in world markets explains nearly half of the decline in compromises from 1928 to 1932.

⁵⁶ Taft (1964, pp. 398-411).

⁵⁷ Cohn (2001).

⁵⁸ Kaplan (2008), Smiley (2008).

Firm Behavior, Product Markets, and Industrial Organization. New mass production sectors like automobiles and steel were bitterly non-union, and the huge plants were impossible to organize using the traditional craft-union approach. Established sectors such as coal and textiles moved to the non-union South.⁵⁹ Nevertheless, employers maintained at least a semblance of labor-management cooperation, on their own terms. One manifestation was the rise in the 1920s of employee representation plans, or “company unions,” which met to discuss grievances, ways to enhance efficiency, or wages and working conditions.⁶⁰ Table 7 shows the growth of such plans, which were largely limited to large-scale industries. These committees had little decision-making authority, and strikes were prohibited. Nevertheless, both sides found the company union useful. Firms reported increased worker morale, lower turnover, and less strike activity. Workers gained in health and safety and grievance resolution. The rise of the company union suggests a “social climate” of greater cooperation than existed before the war.⁶¹

[TABLE 7]

Law and Public Policy. Despite the dismantling of wartime labor institutions, several 1920s initiatives suggest that government shared the desire of employers to find a cooperative approach to labor-management relations. At the national level, “[a]s secretary of commerce in the new Harding administration, Herbert Hoover turned his formidable energies to government-fostered collective bargaining as an alternative to laissez-faire or socialism.”⁶² In the railroad industry in 1926, the federal government recognized the right to collective bargaining, introduced mediation and arbitration procedures, and succeeded in eliminating major strikes between 1927 and 1930.⁶³

⁵⁹ Bernstein (1960, pp 87-89)

⁶⁰ Brandes (1970, pp. 32-33, 120, 124-125).

⁶¹ Bernstein (1960, pp. 171-173); Brandes (1970, p. 128).

⁶² Keller (1990, pp. 140-141).

⁶³ Zieger (1969, pp. 205, 214).

At the state level, the Kansas Court of Industrial Relations, the Colorado Industrial Commission, and others were established to investigate and mediate labor disputes.⁶⁴ Our decomposition shows the importance of unmeasured factors such as firm behavior and public policy in both the rise in the compromise rate between 1922 and 1928, and the dramatic fall as the Depression began. Public arbitration programs and employee representation plans reflect growing recognition during the 1920s of the rights of labor. That growth, which helps to explain the increase in compromises at a time when labor unions struggled, was challenged by the Depression.

e. The New Deal and World War II, 1933 to 1945

In 1933 and 1934, compromise outcomes rose to 32 and then 37 percent of strikes (compared to 21% in 1932). In 1935, the rate fell to 22 percent, only to rise back to 36 percent in 1937. By 1944-45 nearly half of all strikes in the U.S. ended in compromise.

Labor Organization. Our time-series model indicates that growth in union density accounts for nearly half of the 18 percentage-point increase in the compromise rate from 1932 to 1940, and over 40% of the ten-point increase from 1940 to 1944. In 1933, the fortunes of organized labor began to improve. By the end of 1934, union membership had regained its 1923 level.⁶⁵ The United Mine Workers, for example, recovered all of the ground lost since 1927, and expanded into formerly non-union areas like Kentucky and West Virginia. By 1937 a record 5.8 million workers had joined unions, and density (22%) reached unprecedented levels. One new strategy for increasing union membership was industrial unionism – unions that, unlike craft unions, organized entire sectors of workers, including the unskilled. Another was the sit-down strike, in

⁶⁴ Keller (1990, pp. 141-142).

⁶⁵ Taft (1964, pp. 424-450)

which workers nonviolently occupied factories, so that it was difficult for the state to stop strikes by force.⁶⁶ The war years saw further substantial growth in union density, to almost 35%.

Macroeconomic Conditions. The U.S. economy bottomed out in 1933, with unemployment at 25%. From 1934 to 1937, economic conditions improved greatly, though GNP remained well below trend, and unemployment remained historically high. Unemployment fell to 14 percent by 1937. Industrial employment increased over 20 percent from its 1933 low during the same period.⁶⁷ Economic growth resumed, and the price level began to increase.⁶⁸ Our decomposition suggests that inflation explains nearly one-third of the change in the rate of compromise strike outcomes between 1932 and 1940. During the war, inflation moderated.

Immigration and Foreign Trade. Immigration was very low, with no significant changes in immigration policy. Under the Reciprocal Trade Agreements Act of 1934, the Roosevelt administration moved away from protectionism.⁶⁹ Foreign demand for American products grew. Between 1932 and 1940 growth in exports explain nearly a third of the increase in compromise strikes. During the war, disruptions in trade exerted a negative effect on the compromise rate.

Law and Public Policy. Institutional changes in federal policy played a major role in increasing strike compromises. On June 16, 1933, the passage of the National Industrial Recovery Act (NIRA) created the National Recovery Administration (NRA). Section 7(a) guaranteed workers “the right to organize and bargain collectively through representatives of their own choosing,” along with other protections.⁷⁰ The National Labor Board was established in August 1933 to mediate disputes. Special mediation boards were established in the automobile, steel, textile,

⁶⁶ Freeman (1998, pp. 278-287); Rees (1989, p. 16).

⁶⁷ Jacoby (1985, p. 241)

⁶⁸ One theory of union growth holds that such poor but improving economic conditions are ideal: labor’s motivation to organize is high, and its bargaining power is increasing. See Davis (1941), quoted in Freeman (1998, p.280).

⁶⁹ Kaplan (2008).

⁷⁰ Taft (1964, pp. 416-418); Jacoby (1985, p. 223).

bituminous coal mining, and longshoremen's industries. In June 1934, the National Labor Board was replaced by the National Labor Relations Board, which investigated disputes under Section 7(a), held elections of collective bargaining representatives, and acted as a board of arbitration.⁷¹ The NRA was especially important to the growth of the United Mine Workers, the Clothing Workers, and the Ladies' Garment Workers, as it allowed them to establish national or regional bargaining agreements that prevented non-union firms from obtaining a competitive advantage.⁷²

On May 27, 1935, the Supreme Court declared the NIRA unconstitutional. On July 27, the National Labor Relations Act (the "Wagner Act"), which preserved most of the pro-labor protections of Section 7(a), became law. The constitutionality of the Wagner Act, however, remained in question until April 12, 1937, when the Supreme Court approved it in a 5 to 4 vote.⁷³ Thus, for two years the legitimacy of federal protection for unions was in question. The pattern of compromise strikes during this period shows the importance of public policy. The compromise rate, which had risen from 21 percent in 1932 to 32 and 37 percent in 1933 and 1934, with the NIRA in effect, fell to 22 percent in 1935. The rate increased somewhat to 27 percent in 1936, and then jumped to 37 percent during 1937, when the Wagner Act was found constitutional.

In World War II, as in World War I, federal authority over labor markets was expanded, as military production required maximum output. The National War Labor Board and the War Manpower Commission were authorized to intervene in disputes, and even to seize plants.⁷⁴

Firm Behavior, Product Markets, and Industrial Organization. Employment policies underwent substantial change. Personnel departments made hiring, transfer, promotion, and dismissal policies fairer to workers in order to stave off organizing campaigns, or to mollify newly-organized labor forces. Job classification and evaluation plans aimed to eliminate wage inequities.

⁷¹ Taft (1964, pp. 421-422)

⁷² Freeman (1998, p. 286)

⁷³ Taft (1964, pp. 457-462)

⁷⁴ Higgs (1985, pp. 20-21)

Firms also placed greater emphasis on employment security. These changes increased workers' trust in employers, and so made compromises easier to attain. During the war, business representatives to the National War Labor Board favored "stable and secure trade unions."⁷⁵

5. Summary and Discussion

Our analysis suggests that the level of compromise strike outcomes changed between 1880 and 1945 in a way distinct from variations in success or failure rates. The changes in the compromise rate were driven by different factors in different eras. Before World War I the drivers of the growth in compromise were increased union power and changes in the global economy. Rising union density increased workers' bargaining power and reduced their cost of proposing compromises, and competitors' unionization eased the path for individual firms to reach accord with workers. In the international economy, historically high rates of immigration helped keep compromise infrequent before 1900. Rising export demand also seems strongly correlated with increasing compromise rates, perhaps due to salutary effects on the U.S. macroeconomy. In World War I and the 1920s, the domestic macroeconomy becomes more important, with deflation and inflation alternately suppressing and promoting compromise in strikes. Also prominent are "unmeasured" factors: changes in public and business policy toward labor. With the restrictive postwar immigration laws, immigration rates no longer play a role. During the Depression and World War II period the story is similar, except that union power returns as a key driver.

Our game-theoretic model and time-series analysis suggest that the movement away from the "war of attrition" reflects government's and employers' gradual acceptance of collective labor action. The jump during World War I in the government's willingness to negotiate with labor is matched by a jump in compromise rates. William Howard Taft (1918), co-chairman of the War Labor Board, writes just after the war, "Organization of labor has become a recognized institution It has come to stay. . . . [E]very statesman and every man interested in public affairs must

⁷⁵ Lichtenstein (1982)

recognize that [collective bargaining] has to be dealt with.” Few employers or public officials would have agreed thirty years earlier. Years of struggle, aided by military and economic emergencies, resulted in the recognition of labor as a partner in industrial relations. That struggle, with its eventual (if partial) success, is mirrored in the evolution of compromise in strikes.

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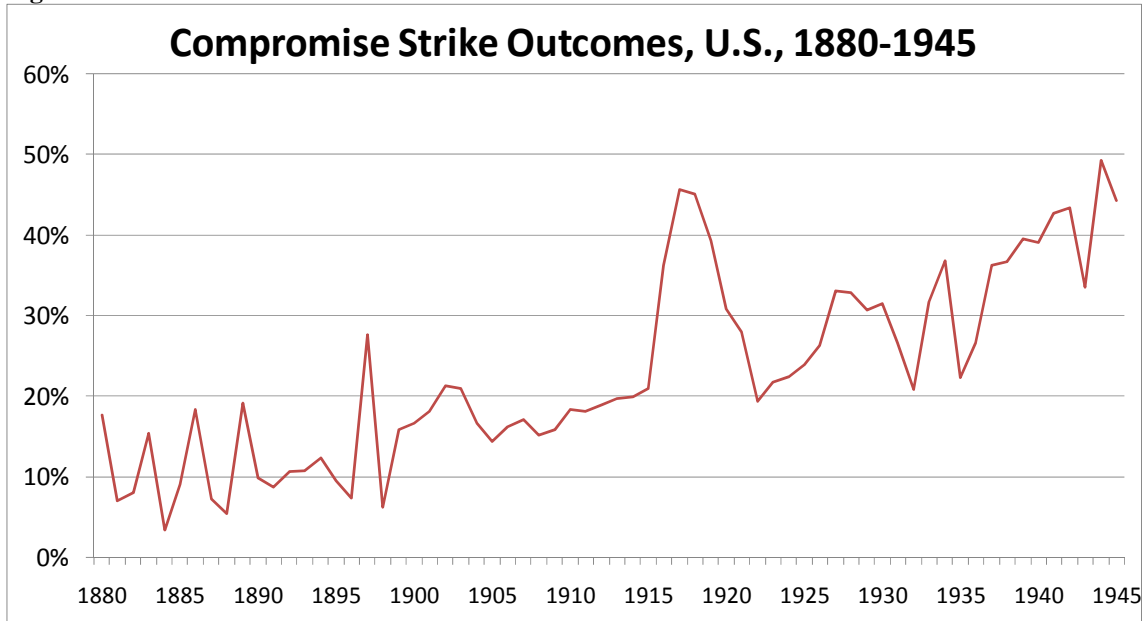
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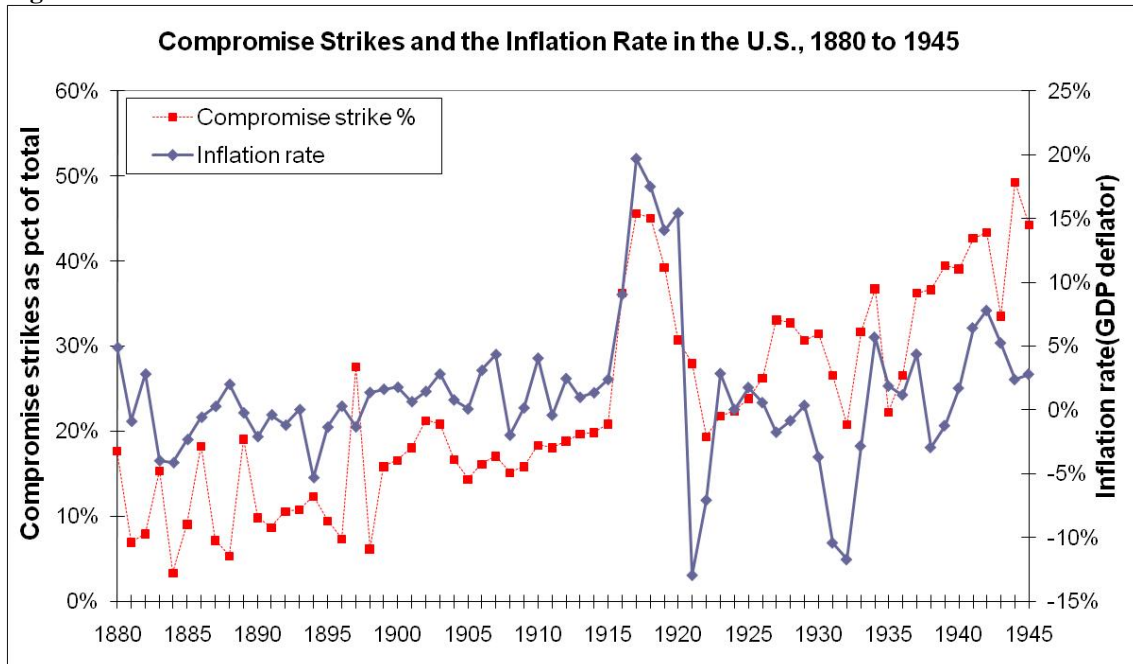
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Figure 1



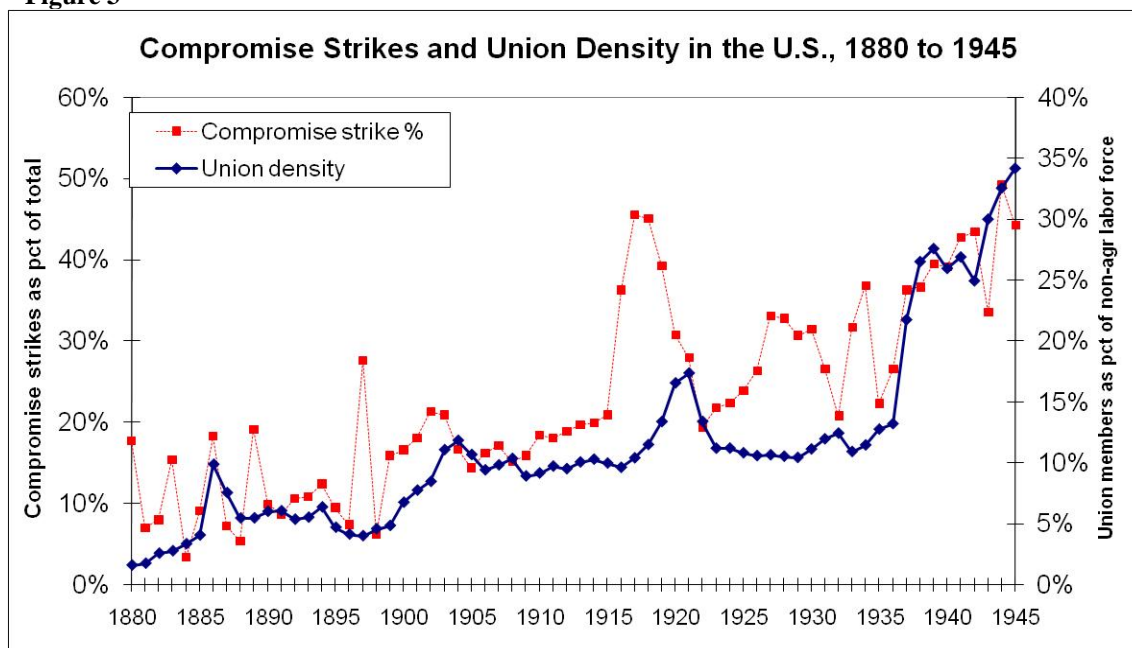
Source: Griffin (1939), Monthly Labor Review

Figure 2



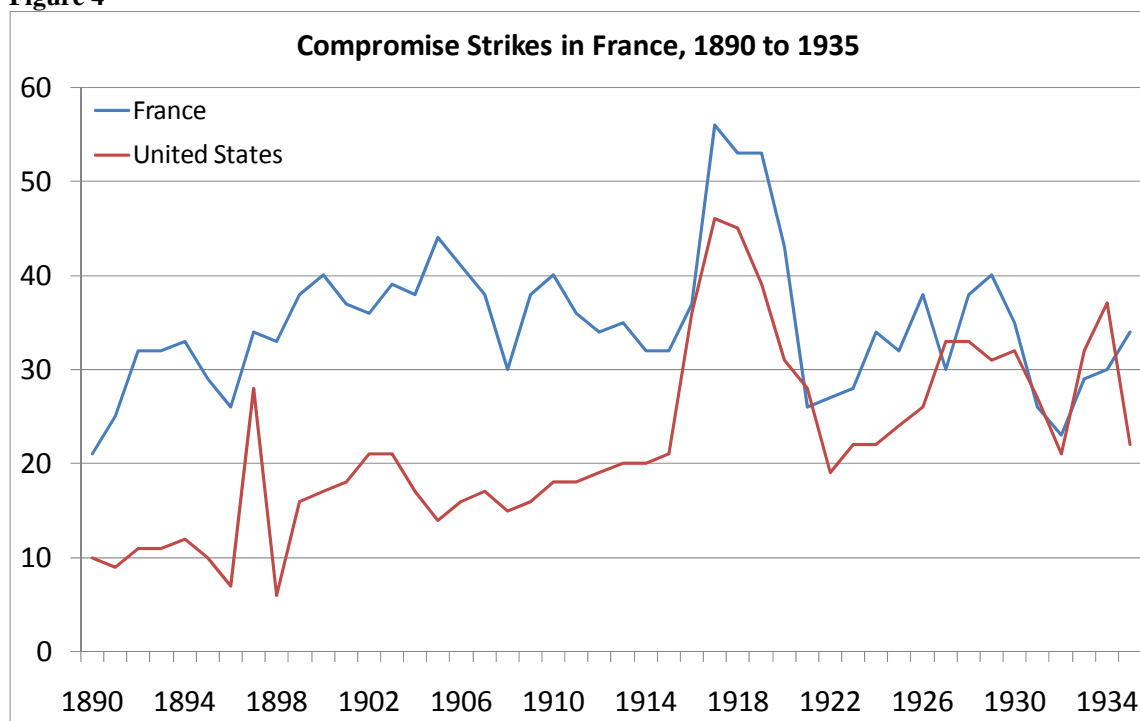
Source: Griffin (1939); Monthly Labor Review; Gordon (2006)

Figure 3



Source: Griffin (1939); Monthly Labor Review; Freeman (1998)

Figure 4



Source: Shorter and Tilly (1974)

Figure 5

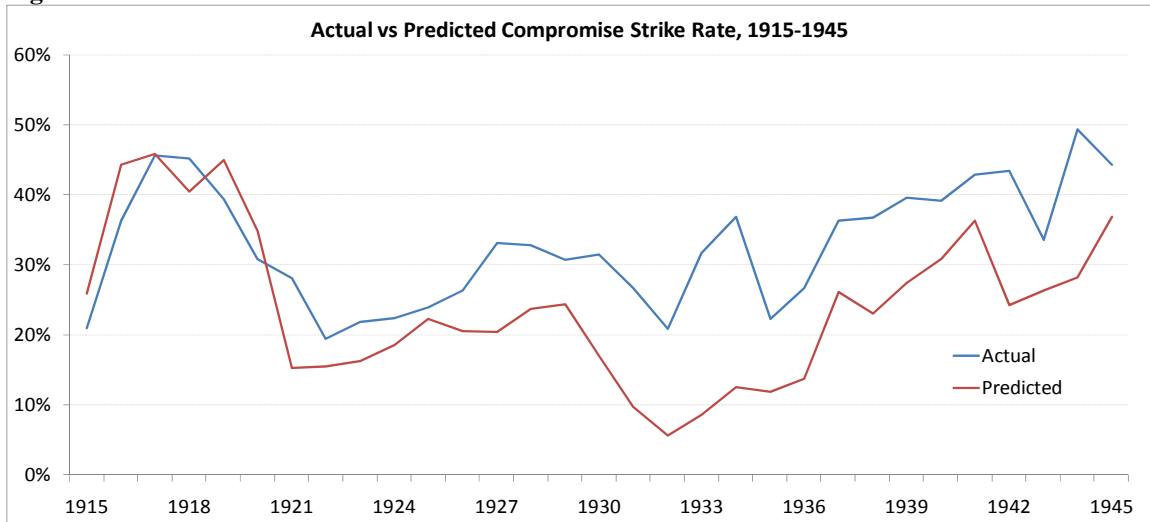


Figure 6

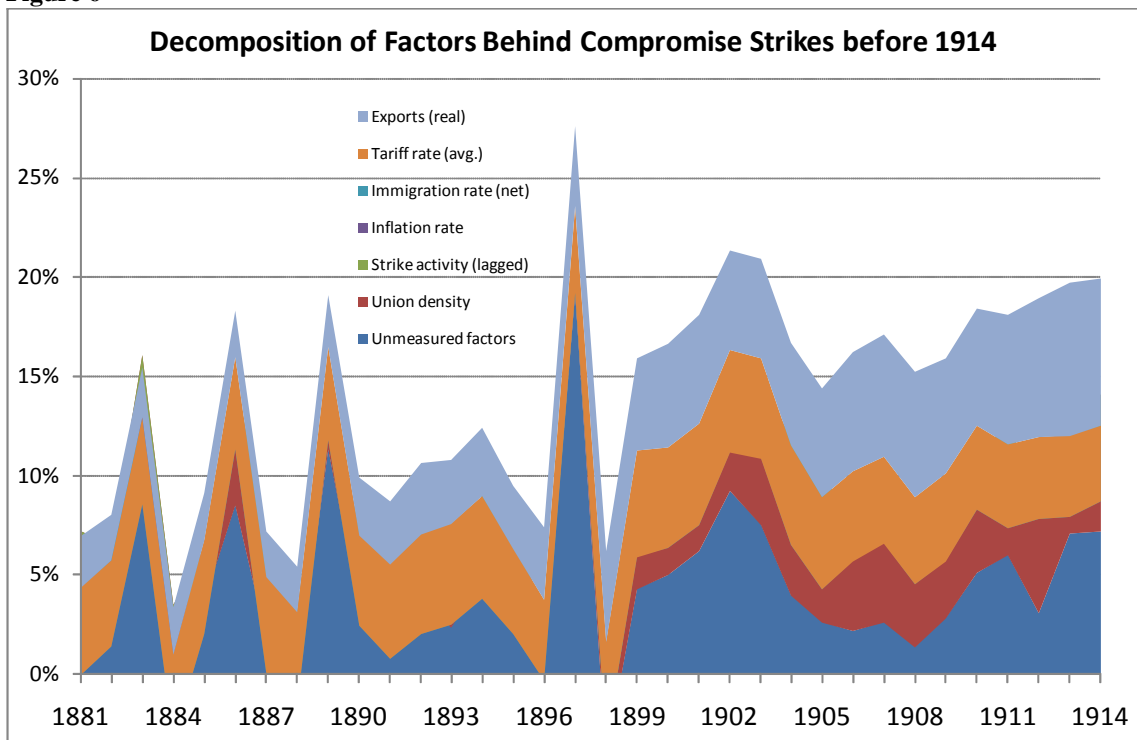


Figure 7

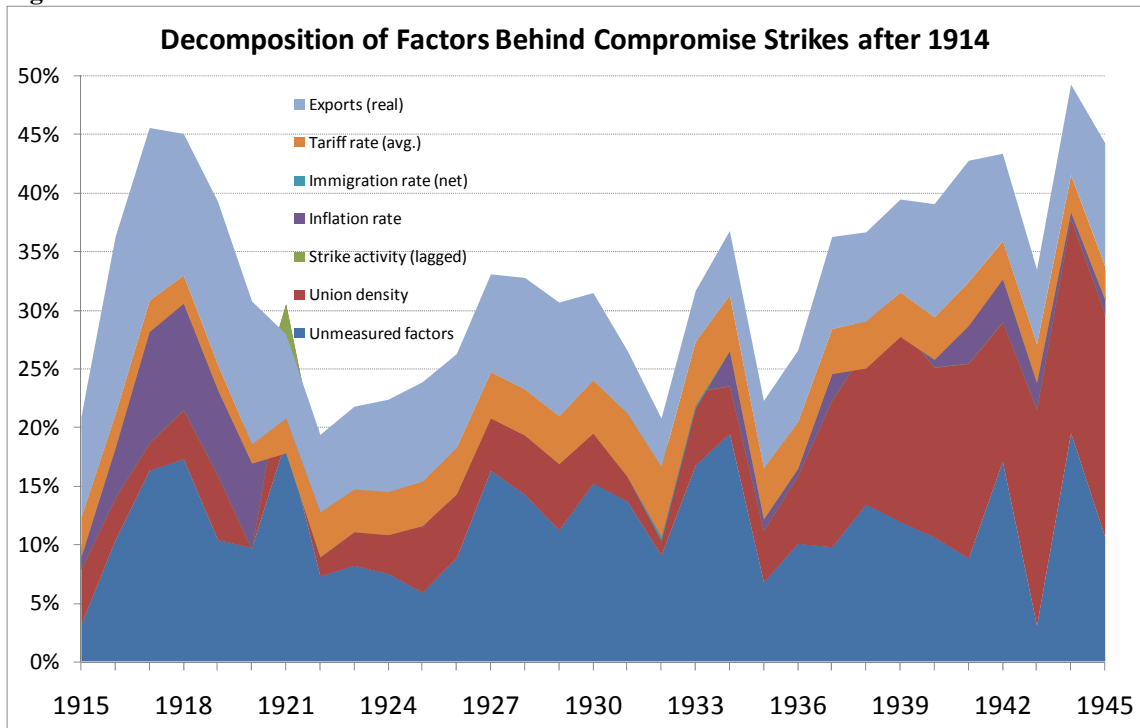
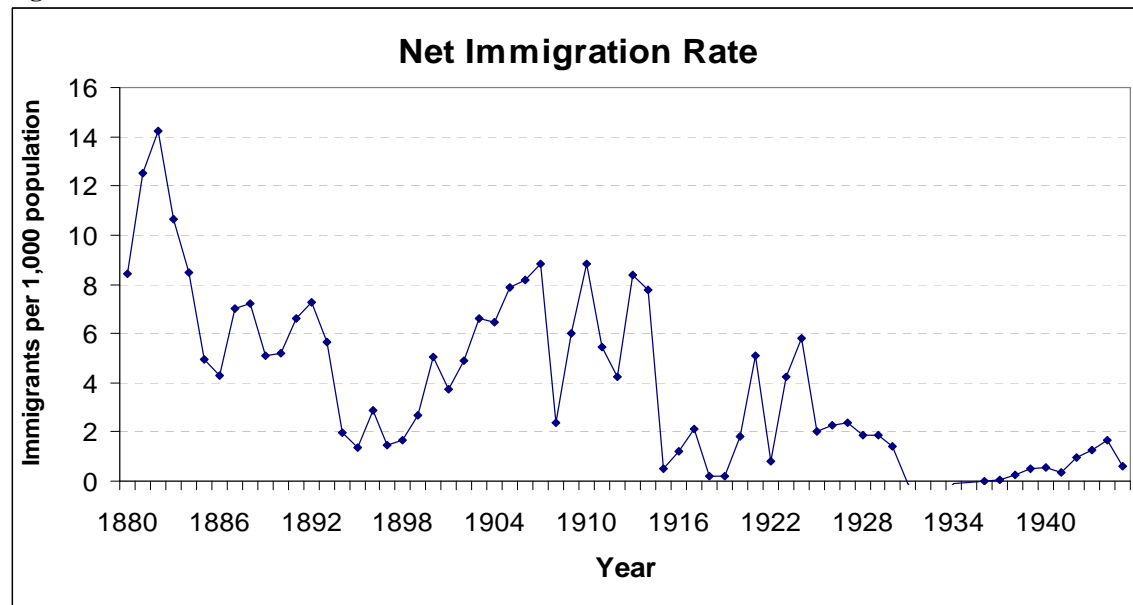


Figure 8



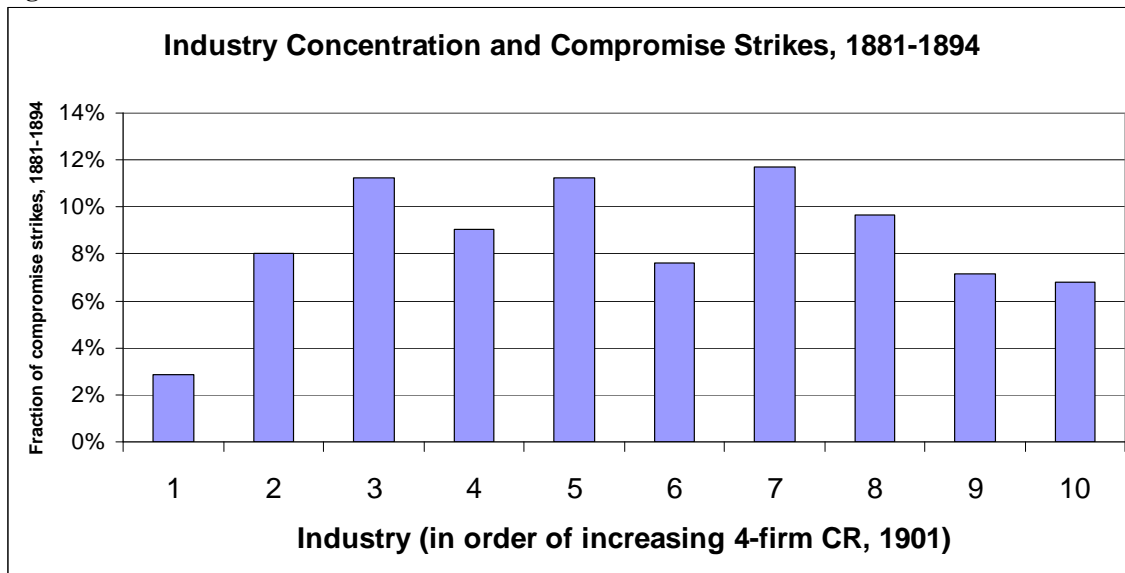
Source: Historical Statistics of the United States, Millennial Edition, Series Ad22

Figure 9



Source: Historical Statistics of the United States, Millennial Edition, Series Ee417, Ee419

Figure 10



Source: Attack and Bateman (2005); U.S. Commissioner of Labor (1888); Currie and Ferrie (2000)

The industries are defined as follows:

		Compr.	4-firm Conc Ratio (1901)	
1	Printing publishing telegraph	2.9%	1%	printing and publishing
2	misc	8.0%	3%	miscellaneous
3	Cooperage and wooden goods	11.3%	12%	furniture (1860 and 1947)
4	Glass and pottery	9.0%	13%	stone, clay, glass products
5	Clothing textiles shoes leather	11.3%	20%	cotton, wool, boots & shoes, leather, clothing (1860 and 1947)
6	Food prep and brewing	7.6%	39%	flour milling, meatpacking, liquor
7	Machines and machinery	11.7%	41%	agricultural implements, machinery
8	Metals and metallic goods	9.7%	46%	iron castings, iron bar
9	Tobacco	7.2%	50%	tobacco
10	Building trades and trans eqpt	6.8%	57%	trans eqpt

Data on compromise strikes come from the U. S. Commissioner of Labor (1888), while data on industrial concentration come from Attack and Bateman (2005).

Table 1

Characteristics of Failed, Successful, and Compromised Strikes

Size and Length, 1881-1894						
	Dur.		No. Firms	Avg. Empl.	Fraction Empl. On Strike	
Failed	25.2		3.1	587	61.8%	
Successful	13.7		3.5	186	79.8%	
Compromise	21.3		6.6	243	85.3%	

Outcome by Cause and Authorization, 1881-1905						
	For wage incr.	Against wage decr.	For union recog.	Single Cause*	Multiple Causes*	Not Auth'd by Union
Failed	31.4%	52.3%	42.9%	49.3%	41.9%	56.3%
Successful	50.0%	34.9%	55.5%	42.8%	45.0%	33.8%
Compromise	18.6%	12.8%	1.6%	7.9%	13.1%	9.9%

Costs, 1881-1894				
	Average		Maximum	
	Workers' Loss	Firms' Loss	Workers' Loss	Firms' Loss
Failed	\$13,482	\$8,190	\$2,479,500	\$4,331,425
Successful	\$4,962	\$1,508	\$1,994,000	\$250,000
Compromise	\$22,388	\$2,470	\$4,705,275	\$100,000

Outcome by Length, 1927-1936						
	< 1 wk	1 wk - 1/2 m	1/2 m - 1 m	1 m - 2 m	2 m - 3m	> 3 m
Failed	35.5%	29.9%	32.0%	43.0%	39.1%	48.2%
Successful	39.7%	39.2%	36.3%	26.2%	24.8%	21.9%
Compromise	19.3%	26.4%	27.1%	24.7%	30.1%	25.8%

Outcome by Number of Workers Striking, 1927-1936							
	6-20	20-100	100-250	250-500	500-1000	1000-5000	5000-10000
Failed	45.0%	38.2%	32.7%	29.8%	25.9%	24.6%	23.0%
Successful	36.3%	36.2%	36.7%	36.4%	35.3%	29.8%	22.1%
Compromise	13.2%	19.7%	25.7%	30.7%	34.4%	40.8%	49.6%

Outcome by Cause, 1927-1936			
	For wage incr.	Against wage decr.	For union recog.
Failed	28.2%	50.8%	46.4%
Successful	40.3%	26.5%	40.4%
Compromise	31.5%	22.7%	13.1%

*: Data for 1881-1894.

Sources: Commissioner of Labor (1888); Peterson (1938); Edwards (1981); Currie and Ferrie (2000)

Table 2

Bargaining Outcomes, Labor Militancy, and the Macroeconomy, 1881 to 1945
 (annual averages for the periods)

Period		Comp Strike Rate	Pct Workers on Strike	Union Density	Inflation Rate	Real GDP Growth
1881	1896	10.1%	2.7%	5.1%	-1.1%	2.6%
1897	1904	17.9%	3.3%	7.4%	1.1%	5.1%
1905	1915	17.7%	2.7%	9.8%	1.5%	1.7%
1916	1921	37.5%	6.8%	13.2%	10.5%	-0.3%
1922	1933	26.8%	2.1%	11.3%	-2.7%	0.1%
1934	1945	37.6%	4.1%	24.0%	2.9%	8.8%

Sources: Freeman (1998), Gordon (2006), Griffin (1939)

Table 3
AR(1) Estimation of Compromise Strike Rates, 1880-1945

Variable	Coeff. (SE)
Macroeconomy	
Inflation rate	.527 *** (.135)
Labor organization	
Union density	.665 *** (.135)
Pct. of labor force on strike in previous year	-.737 ** (.308)
Global economy	
Net immigration rate	-.004 * (.002)
Average tariff rate	.103 (.131)
Real exports	.029 *** (.010)
Public Policy	
Post-1914	.071 *** (.023)
Time trend	-.00004 (.0008)
Constant	.125 1.55
n	65
R ²	0.91
F(8,56)	75.10

*, **, ***: statistically significant at the .1, .05, and .01 levels, respectively

Table 4**Contribution to Change in Rate of Compromise**

Earlier Year	Later Year	Pct. Point Change in Compr. Strike %	Union Density	Strike Activity	Inflation	Net Immigra'n	Avg. Tariff	Real Exports	Unmeas'd Factors
1881	1901	11%	36.0%	-8.5%	7.3%	31.5%	6.1%	25.9%	1.8%
1901	1914	2%	1.7%	-0.3%	0.4%	-1.6%	-1.3%	1.9%	1.0%
1914	1918	25%	3.2%	-1.8%	33.7%	11.9%	-5.7%	18.7%	40.1%
1918	1922	-26%	-4.9%	-0.8%	50.3%	0.9%	-5.8%	21.3%	39.0%
1922	1928	13%	-14.2%	18.7%	24.5%	-3.2%	0.5%	21.7%	52.1%
1928	1932	-12%	-10.5%	1.2%	47.7%	-9.2%	-17.4%	44.9%	43.3%
1932	1940	18%	49.2%	-10.2%	38.6%	-3.1%	-13.1%	30.2%	8.5%
1940	1944	10%	43.1%	-6.1%	3.5%	-4.3%	-4.2%	-19.2%	87.3%

NB: Because of the small change in the rate of compromise (2 percentage points) during the period 1901-1914, we report the absolute predicted effect of the changes in the explanatory variables rather than the percentage of the total change.

Table 5**Nineteenth Century State Pro-Labor Laws**

State	Unions Legal	Blacklist Illegal	Maximum Hours
Connecticut		1897	1867
Delaware			
Illinois		1887	1867
Indiana	1893	1889	1889
Maine			1871
Maryland	1884		1886
Massachusetts	1888	1892	1890
Michigan	1883		1885
New Hampshire			1847
New Jersey	1877		1887
New York	1870	1887	1870
Ohio	1892		1886
Pennsylvania	1869	1897	1887

Source: Currie and Ferrie (2000)

Table 6**Trade Agreements, 1890 to 1910**

Industry	Began	Ended
Glassmaking	1870s	
Stove Foundries	1891	
Coal Miners	1898	
Potters	1900	
Longshoremen	1900	1908
Machinists	1900	1904
Printing and Publishing	1901	
Structural Iron	1903	1905
Lake Seamen	1903	1908
Marine Engineers	1903	1908
Lithographers	1904	1906
Coopers	1905	
Hatters	1907	1908
Wallpaper Printers	1908	

Sources: Barnett (1912); Commons (1918); Taft (1964)

Table 7

Employee Representation Plans, 1920s

<u>Year</u>	<u>No.</u>	<u>Workers Covered</u>
1919	145	403,765
1926	432	1,369,078
1928	399	1,547,766

Source: Bernstein (1960); Soule (1947)